

WHAT IS CLAIMED IS:

1. A method for fabricating semiconductor devices, the method comprising the steps of:

forming a semiconductor layer containing a positive layer on a mother substrate;

5 forming a metal layer on the semiconductor layer;

separating the mother substrate from the semiconductor layer after forming the metal layer; and

removing a desired region of the metal layer from an exposed surface of the semiconductor layer from which the mother substrate has been separated to form a plurality of mutually separated semiconductor devices each containing the semiconductor layer.

2. The method of claim 1, wherein the metal layer is composed of Au, Ag, or Cu.

3. The method of claim 1, wherein the metal layer is formed by plating.

4. The method of claim 1, wherein the metal layer has a film thickness of 10 μm or more.

5. The method of claim 1, wherein the step of separating the mother substrate is performed by irradiating a side of the semiconductor layer formed with the mother substrate with a laser.

6. The method of claim 1, wherein the step of separating the mother substrate is performed by polishing.

7. The method of claim 1, further comprising, between the step of forming the semiconductor layer and the step of separating the mother substrate, the step of:

partly removing the semiconductor layer from a side of the semiconductor layer opposite to the side thereof formed with the mother substrate to separate the semiconductor layer into a plurality of regions, wherein

the plurality of semiconductor devices contain the plurality of respective regions.

8. The method of claim 1, further comprising, between the step of forming the metal layer and the step of forming the plurality of semiconductor devices, the step of:

forming a polymer material film having an adhesive property on a surface of the metal layer opposite to a surface thereof formed with the semiconductor layer.

9. The method of claim 8, wherein the polymer material film is composed of a material having a stretching property.

10. The method of claim 1, further comprising, between the step of forming the metal layer and the step of separating the mother substrate, the step of:

forming a semiconductor substrate having a cleaving property on a surface of the metal layer opposite to a surface thereof formed with the semiconductor layer.

11. The method of claim 10, wherein the semiconductor substrate is composed of Si or SiC.

12. The method of claim 10, wherein the step of forming the plurality of semiconductor devices includes the steps of:

forming a trenched portion in a surface of the semiconductor substrate which has been exposed by removing the desired region of the metal layer; and

cleaving the semiconductor substrate formed with the trenched portion to form the plurality of semiconductor devices.

13. The method of claim 1, wherein the semiconductor layer is composed of a group III nitride semiconductor.